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Fact Sheet

March 2020

Vapor Intrusion Assessment at the Martha Rose Chemical Superfund Site, Holden, Johnson County, Missouri

INTRODUCTION

The Martha Rose Chemical Superfund Site in Holden, Missouri (Site) resulted from a polychlorinated bi-phenyl (PCB) chemical spill initially reported to the EPA in 1981. Cleanup began in 1986 under an agreement between the EPA and the responsible parties. In 1992, EPA issued an additional order that included further removal of PCB-contaminated materials and the implementation of property deed restrictions and groundwater monitoring. A total of 21.1 million pounds of PCB-contaminated materials were removed from the Site during cleanup. During the cleanup, it was also determined that elevated levels of tetrachloroethylene (PCE) and trichloroethylene (TCE) were present in groundwater at the Site. Unlike PCB compounds, TCE and PCE readily moves through the groundwater with its vapor infiltrating buildings. In order to assess whether this is occurring the EPA plans to perform a vapor intrusion (VI) assessment in areas surrounding the Site.

SAMPLING AND ASSESSMENT

VI assessment sampling is performed to determine whether vapors from groundwater contaminants like TCE and PCE have the potential to migrate into nearby buildings and pose a threat to human health. The sampling will test for the presence of contaminated vapors in shallow soils beneath, and inside, buildings. The EPA will obtain interior and soil-gas samples from both commercial and residential properties located near the Site.

ABOUT THE CONTAMINATION

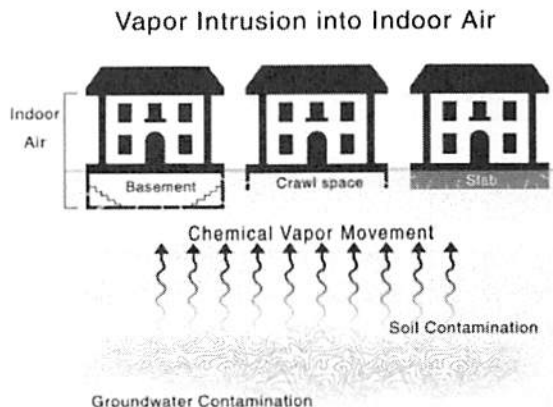
PCE and TCE are chlorinated hydrocarbon solvents that are commonly used to make other chemicals, as metal degreasers, and in dry cleaning operations. These hazardous substances may cause adverse health effects, including cancer and birth defects. The levels of these chemicals observed in shallow groundwater at the Site could indicate the presence of soil vapor contamination. The VI assessment will determine if soil vapor has impacted nearby homes and buildings or has the potential to do so.

What is vapor intrusion?

Vapor intrusion occurs when liquid chemicals give off gases that seep into buildings through cracks in basement walls, foundations, sewer lines or other openings. Sometimes these liquid chemicals are spilled on the ground or leak from underground storage tanks. They trickle down into the soil and groundwater, and the gases they give off travel through soil particles as vapors. These vapors then move up through the soil and into nearby buildings, contaminating indoor air.

Homes in the same neighborhood, even right next door, can be affected differently by vapor intrusion. The effects can be dependent upon the condition of the home. For instance, a home with more cracks in its foundation could be more prone to vapor intrusion. Vapor intrusion is similar to the process that occurs when radon, a naturally occurring radioactive gas, enters a home through cracks in the foundation. Vapor intrusion from chemicals is uncommon, but should be considered when there is a known source of soil or groundwater contamination nearby.

When the EPA investigates possible vapor intrusion, we also take into account VOCs found in household products stored in your home. Paints, paint strippers and thinners, glues, solvents, stored fuels and dry-cleaned clothing all contain VOCs. These household products are more likely to be a source of indoor air quality problems than vapor intrusion from a chemical spill.



What are the health concerns with vapor intrusion?

When vapor intrusion does occur, the health risk will vary based on the type of chemicals, the levels of chemicals found, the length of exposure and the health of the exposed individuals. When chemicals build up in indoor air at high levels, some people may experience health effects such as eye and respiratory irritation, headaches and/or nausea. These symptoms are temporary and should go away when the person moves to fresh air. Usually, health officials are more concerned about low-level chemical exposures over many years. Long-term exposure to some chemicals may raise a person's lifetime risk of developing cancer or other chronic diseases.

What happens if a problem is found?

The most common solution is to install systems often used to reduce naturally-occurring radon that seeps into homes in some parts of the country. These systems, called radon mitigation systems, remove soil vapors from below basements or foundations before they enter homes. Vapors are vented outside of the homes where they become dispersed and harmless. These systems use minimal electricity and do not noticeably affect heating and cooling efficiency. They also prevent radon from entering homes - an added

health benefit in radon prone areas. Once the source of the vapors is eliminated, the systems should no longer be needed. In homes with radon problems, these systems should remain in place permanently.

Additional information:

For health-related questions regarding vapor intrusion, contact your local health department or the Agency for Toxic Substances and Disease Registry at **1-888-422-8737** or visit their website at www.atsdr.cdc.gov.

For more information on indoor air quality, visit the EPA's website at: <http://www.epa.gov/iaq> or call the Indoor Air Quality Information hotline at **1-800-438-4318**.

If you have questions or need additional information about the VI assessment at the Martha Rose Chemical Superfund Site, please contact:

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